

Sustainable development impacts of various ways to modernize urban food distribution: the case of vegetables in Vietnam.

Paule Moustier¹ and Nguyen Thi Tan Loc²

Concept and rationale

During the past twenty years, the food sector in Vietnam has undergone major changes. Economic and demographic changes have caused an increase in the demand for more diverse and better quality produce, especially in urban areas. The food distribution sector has adapted to these changes and has now taken on a diversity of forms including covered markets, wet markets, street vendors, shops and supermarkets. The government is promoting the expansion of supermarket distribution and plans to eliminate all informal trade on the grounds of modernization, which includes various concerns related to food safety, economic development and attraction of foreign investors. Urban areas are indeed windows of government efforts to promote economic development through modernization, while they increasingly concentrate social problems, especially unemployment of the less qualified dwellers (Moustier *et al.*, 2009; Thi Hong Nguyen *et al.*, 2013; Wertheim-Heck *et al.*, 2015).

Research objective

The paper investigates the impact of supermarkets in terms of various dimensions of sustainable development, related to social objectives (employment, consumers' access, management of food safety), economic objectives (farmers' incomes), and environmental impact (mostly as regards farmers' practices; and nature of transport used), relative to other distribution formats. Supermarkets are considered as a package of organizational and technical innovations in food chains which can be related to sustainable development objectives.

Conceptual framework

The paper starts by some review on the literature to get some hypotheses on the link between different formats of food distribution (more or less centralized and capital-intensive) and sustainable development. It is hence a contribution to the analysis of the performance of food chains in terms of sustainable development as the structure of food chains, in particular the technological content, is commonly (sometimes implicitly) considered as an indicator of food chain performance, particularly economic performance, but also food safety management. The development of supermarkets goes hand in hand with various innovations in terms of technologies (*e.g.*, logistics platforms, cashiers, refrigeration) which result in cost reduction (thanks to economies of scale), value-adding activities and often go together with patterns of vertical integration in the chain (Hagen, 2002; Reardon *et al.*, 2009). One challenge is how to ensure that the value added by these new enterprises can effectively be distributed to the poorest people rather than primarily bringing profit to those who are able to invest in this demanding business and excluding the poor who cannot compete with them. Labor-saving and scale-biased innovations have generally a negative impact on employment of the poor and may be less suitable to a country like Vietnam where labor is in excess supply than is the case with capital-saving or neutral innovations. As regards the effect of vertical integration on management of food safety and environmental impact at farmers' level, the literature shows ambiguous results – but it tends to show benefits in terms of economic results and food safety that are driven by retailing firms' involvement in the control of farmers' practices (Biénabe *et al.*, 2011; Jaffee *et al.*, 2011; Minten *et al.*, 2009).

1. CIRAD, UMR MOISA, F-34398 Montpellier, France.

2. Fruit and Vegetable Research Institute (FAVRI), Vietnam.

Method-data collection

The paper is based on a review of the literature and empirical data collected in Vietnam between 2009 and 2014. In 2009, we conducted an analysis of inputs-outputs, costs, benefits, and governance along four value chains in the horticultural and rice sector, which generated indicators of economic performance, technologies, chain governance, use of energy and chemical inputs. In 2009 and 2014, we estimated the number of employees and volumes traded by different points of sale to estimate their contribution to total vegetable distribution. In 2009, we also conducted surveys of poor consumers (110 in Hanoi and 52 in Ho Chi Minh City) to appraise their access to food. We compared the prices of selected food products in various points. In 2014, we estimated the share of different selling points by a survey of 138 peri-urban farmers. We also conducted some action-research on the inclusion of street vending in selected districts where we took into account livelihood as well as food safety issues (Nguyen and Moustier, 2015).

Main results

We estimated that supermarkets generate half the employment of street vending for a given quantity of vegetables, markets and shops standing in-between. In 2009, vegetable street vendors supplied 32% of the total vegetable volume sold to consumers, compared to 58% for retail markets, 9% for shops, and 1% for supermarkets. Until 2009, the number of vegetable street vendors increased at a higher rate than that of the city's population. In 2014, we estimated that 45% of vegetables were sold by street vendors, 49% at retail markets, with a limited volume being sold at stores (3%) and supermarkets (6%). Peri-urban vegetable producers mostly sell through markets (42%), street vendors (42%) or directly to canteens and consumer groups (9%). Freshness, lower prices and easier access are major reasons for consumers preferring market or street retailing to supermarkets, while supermarkets and shops are more trusted in terms of food safety. Immediate payment in cash is the major reason of farmers not selling to supermarkets, albeit producer prices are generally higher. Yet wet market retailers and street vendors are seriously jeopardized by the negative attitude of national as well as urban authorities towards their business. The modernization of wet markets can indeed stimulate unregulated street vending with hygiene and traffic problems (Wertheim-Heck *et al.*, 2015). The bulk of vegetables supplied to urban supermarkets originate from "safe vegetables" cooperatives in peri-urban areas (sold either directly through contracts or through dedicated wholesalers) or semi-public companies. The incomes of farmers participating in supermarket-driven chains are generally higher than in informal markets, but this is allowed by farmers belonging to cooperatives involved in marketing; and farmers' direct sales in cooperative-managed shops provide them with higher incomes.

Farmers' efforts in reducing chemical inputs, which are favorable to food safety as well as environmental protection, are indeed stimulated by supermarket outlets; but also by alternative ones, including quality food shops. Comparing pesticide residues in various points of sales shows the higher performance of organic shops and supermarkets along this criterion of food safety. But training street vendors as regards sources of supply and waste management is an efficient way to upgrade their business. Consumers' access to supermarkets is mostly by cars or motorbikes, while food distributed by street vendors enables consumers' access to food by foot, which suggests a lower energy cost of street vending, at least at the final stages of distribution. There is indeed a variety of ways to upgrade food distribution, along sustainable development objectives, besides supermarkets, including trained street vendors in terms of food safety; farmers' organisations involved in chemical-limited production, food labelling and distribution; farmers' markets; quality food shops. These innovations combine the advantages of decentralization and labor-intensity in food distribution, with an orientation towards consumers' health and improved environment. The urban context can prove positive in the development of such innovations, due to the availability of technical and marketing information, and the proximity between farmers, retailers and consumers. Yet it requires a more positive attitude of public authorities towards small-scale distribution. The paper concludes with a tentative model of relationships between organization of food distribution and supplying chains, and consequences on economic, social and environmental objectives.

References

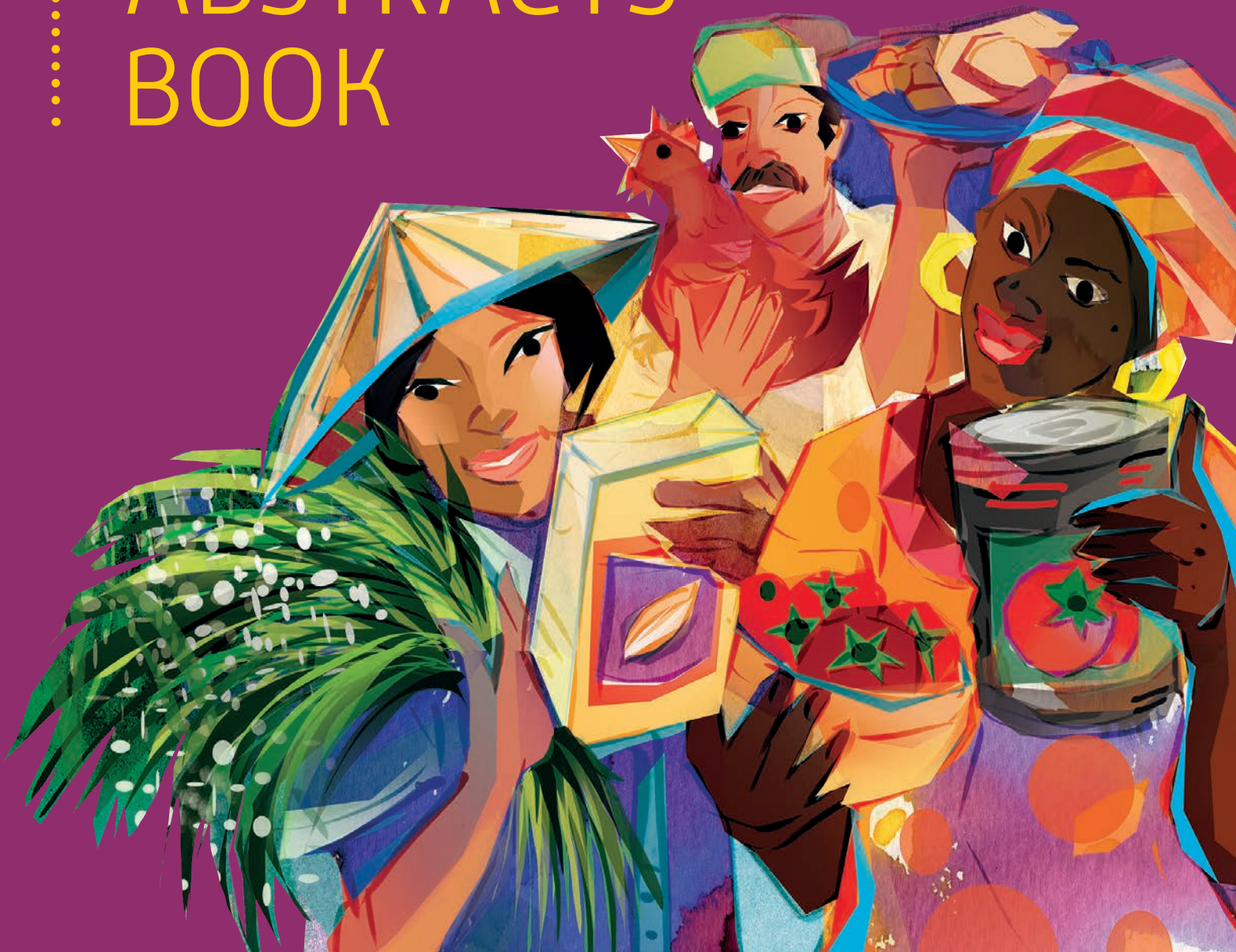
- Biénabe, Estelle, Julio A. Berdegue and Lucian Peppelenbos 2011. Reconnecting markets: Innovative global practices in connecting small-scale producers with dynamic food markets. In *Reconnecting markets: Innovative global practices in connecting small-scale producers with dynamic food markets*. Farnham: Gower Publishing.
- Hagen J.M. 2002. Causes and Consequences of Food Retailing Innovation in Developing Countries: Supermarkets in Vietnam. New York: Cornell University, Department of Applied Economics and Management.
- Jaffee, Steven, Spencer Henson and Luz Diaz Rios 2011. Making the Grade: Smallholder Farmers, Emerging Standards, and Development Assistance Programs in Africa-A Research Program Synthesis. In *Making the Grade: Smallholder Farmers, Emerging Standards, and Development Assistance Programs in Africa-A Research Program Synthesis*: World Bank, wdronline.worldbank.com.
- Minten B., L. Randrianarison and J.F.M. Swinnen 2009. Global retail chains and poor farmers: evidence from Madagascar. *World Development* 37: 1728-1741.
- Moustier P., M. Figuié, The Anh Dao and Thi Tan Loc Nguyen 2009. Are supermarkets poor-friendly? Debates and evidence from Vietnam. In *The crisis of food brands*, eds. A. Lindgreen and M. Hingley, 311-327: Gower Publishing.
- Nguyen, Thi Tan Loc and Paule Moustier 2015. Toward a Restricted Tolerance of Street Vending of Food in Hanoi Districts: The Role of Stakeholder Dialogue. *World Food Policy* 2.
- Reardon, Thomas, Christopher B. Barrett, Julio A. Berdegue and Johan F. M. Swinnen 2009. Agrifood Industry Transformation and Small Farmers in Developing Countries. *World Development* 37: 1717-1727. doi: 10.1016/j.worlddev.2008.08.023
- Thi Hong Nguyen, Hai, Steve Wood and Neil Wrigley 2013. The emerging food retail structure of Vietnam: Phases of expansion in a post-socialist environment. *International Journal of Retail & Distribution Management* 41: 596-626.
- Wertheim-Heck, Sigrid CO, Sietze Vellema and Gert Spaargaren 2015. Food safety and urban food markets in Vietnam: The need for flexible and customized retail modernization policies. *Food Policy* 54: 95-106.

12-14 December 2016,
Le Corum, Montpellier - France



Agri-Chains & Sustainable Development
> *Linking local and global dynamics*

ABSTRACTS BOOK



WELCOME ADDRESS

© Lilian Martorell



Welcome to AC&SD 2016

On behalf of the Scientific and Organizing Committees, it is a great pleasure to welcome you to the International Conference on Agri-chains and Sustainable Development (AC&SD 2016). This conference aspires to widen the debate about the role of agricultural value chains towards sustainable development. Year 2015 was a critical political and diplomatic milestone: the member states of the United Nations signed a new agenda for development, with the 17 Sustainable Development Goals (SDGs) placing sustainability at the core of international efforts. Development and academic actors are since then exploring new avenues for translating the SDGs into reality and implementing global and local frameworks and partnerships. Our conference aims at joining these efforts, with the consideration that agricultural value chains form spaces where local and global challenges to sustainability connect and within which local and global actors experiment and negotiate innovative solutions.

The scientific committee has assembled a very attractive program for AC&SD 2016 that seeks to cover and confront the diversity of realities behind agri-chains, from localized chains, embedded in specific places, to global value chains. In the parallel sessions, transformations of these agri-chains and their connections to sustainable development will be discussed by speakers from the academia, the civil society, the private sector and decision makers. This multi-stakeholder perspective will also be brought about in the plenary sessions. Here, world renowned keynotes and panelists to three high level round tables will discuss about the role and importance of evaluation, public and private institutions and innovations at different scales for transforming agri-chains towards sustainability transitions.

This edition gathers about 250 participants from 39 countries. AC&SD 2016 owes a lot to the scientific and organizing committees for preparing the program, and particularly to Brigitte Cabantous, Chantal Carrasco and Nathalie Curiallet for all the logistics, as well as to our support team of Alpha Visa that we warmly thank for their help.

We wish us all a fascinating, successful, inspiring and enjoyable AC&SD 2016 and we very much look forward to its result and to the strengthening of both a scientific community and a community of practice to implement the outcome!!

Estelle Biénabe, Patrick Caron and Flavia Fabiano,
Cirad Co-chairs AC&SD 2016

COMMITTEES

Scientific committee

- **Estelle Bienabe**, CIRAD, France**
 - **Julio Berdegué**, RIMISP, Chile*
 - **Thierry Bonaudo**, AgroParisTech, France
 - **Larry Busch**, Michigan State University, USA
 - **Patrick Caron**, CIRAD, France*
 - **François Côte**, CIRAD, France
 - **Benoît Daviron**, CIRAD, France
 - **Djiby Dia**, ISRA, Senegal
 - **Flavia Fabiano**, CIRAD, France**
 - **Pierre Fabre**, European Commission EuropeAid, Belgium
 - **Bernard Hubert**, Agropolis International, France*
 - **Patrice Levang**, IRD, France
 - **Florence Palpacuer**, Université de Montpellier, France
 - **Felicity Proctor**, RIMISP, UK
 - **Ruerd Ruben**, Wageningen UR, The Netherlands
 - **Nadia Scialabba**, FAO, Italy
 - **Dao The Anh**, CASRAD, Vietnam
 - **Alban Thomas**, INRA, France*
 - **Jodie Thorpe**, IDS, UK*
 - **Sophie Thoyer**, Montpellier SupAgro, France
 - **Maximo Torero**, IFPRI, USA
- * Member of the international organising committee
** Member of the local organising committee

Organising committees

International organising committee

- **Karen Brooks**, IFPRI, USA
- **Jean-Marc Chataigner**, IRD, France
- **Clement Chenost**, Moringa Fund, France
- **Thierry Doré**, AgroParisTech, France
- **Ronan Le Velly**, Montpellier SupAgro, France
- **Huub Loffler**, Wageningen UR, The Netherlands
- **Philippe Pipraud**, French Ministry of Agriculture, France
- **Lilian Puech**, French Ministry of Foreign Affairs, France

Local organising committee

- **Frédéric Bourg**, CIRAD, France
- **Brigitte Cabantous**, CIRAD, France
- **Chantal Carrasco**, CIRAD, France
- **Nathalie Curiallet**, CIRAD, France
- **Frédérique Causse**, CIRAD, France
- **Delphine Guard-Lavastre**, CIRAD, France
- **Nathalie Villeméjeanne**, Agropolis International, France

Landscape factors influencing sustainable food agri-chain innovation: The role of place in the Toronto experience of Local Food Plus	173
<i>Wayne Roberts [et al.]</i>	
Are food losses and waste overestimated in developing countries?	176
<i>Géraldine Chaboud</i>	
Vulnerability and resilience of the urban food system to extreme weather: a case study of Colombo, Sri Lanka	180
<i>Christina Semasinghe [et al.]</i>	
Resilience of rural-urban food flows in West Africa	182
<i>Pay Drechsel, Hanna Karg, Richard Kofi Appoh and Edmund Akoto-Danso</i>	

Session 10

Innovations in approaches and tools for inclusive and efficient value chain development

Commercial and inclusive value chains: doing good and doing well	184
<i>Malcolm Harper, John Belt and Rajeev Roy</i>	
Factors influencing successful inclusion of small farmers in modern value chains in ACP countries	188
<i>Andrew Shepherd</i>	
Cross-border trade and women in value chain development	192
<i>Florence Tartanac</i>	
Inclusive and efficient value chains	195
<i>Maximo Torero</i>	
Assessing equity in value chains through a participatory guide to business models that link smallholders to markets: insights from LINK application across diverse value chain settings	196
<i>Mark Lundy [et al.]</i>	
Household asset endowments and implications for inclusive value chains	197
<i>Jason Donovan</i>	
Gender equity in value chain and livelihoods development: innovative approaches and tools	198
<i>Dietmar Stoian</i>	
Innovation for inclusive value-chain development, successes and challenges	199
<i>André Devaux</i>	
Measuring and simulating trust in value chain development	200
<i>Christine Plaisier</i>	

Session 11

Linking global value chains and territories: conceptual insights for understanding and ensuring sustainability at different scales

Agri-chains and territories “zero-deforestation”: what role for the payments for environmental services?	202
<i>Alain Karsenty</i>	
Vulnerability and resilience modelling for sustainable food systems	205
<i>Paolo Prosperi and Thomas Allen</i>	